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APPLICATION NO.	FILING DATE.	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,795	03/16/2004	Lawrence J. Dickson	29381/04000	1927

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EXAMINER.

JOHNSON, STEPHEN

ART UNIT	PAPER NUMBER
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3641

DATE MAILED: 11/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/801,795

Applicant(s)

DICKSON, LAWRENCE J.

Examiner

Stephen M. Johnson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-26, 28 and 29 is/are pending in the application.
- 4a) Of the above claim(s) 9-11, 21 and 24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 12, 13, 15-20, 22, 23, 25, 26, 28 and 29 is/are rejected.
- 7) ☒ Claim(s) 14 is/are objected to.
- 8) ☒ Claim(s) 1-26, 28 and 29 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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1. Applicant's election with traverse of species A directed to a metallic facing element (illustrated in figs. 1-3) in combination with a backing structure in the reply filed on 8/16/2005 is acknowledged.

Claims 9-11, 21, and 24 are withdrawn from consideration as being directed to non-elected species. Claim 11 contains the claim limitation "corrugated" that is directed to the embodiment that includes fig. 4. Claim 21 contains the claim limitation directed to "a protective outer cover" that is directed to species A'.

Claims 1-8, 12-20, 22-23, 25-26, and 28-29 read on the elected species A and an action on these claims follows.

2. Claims 26 and 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 26 claims a range of "at least about 7". Note that the claim from which it depends claims a range of "between about 4 and about 10". Since the term "at least about 7" includes anything from 7 to infinite, claim 7 does not contain all of the limitations of the claim from which it depends and as such is indefinite under 35 USC 112.

In claim 29, applicant claims "the network of fibers comprises a resin matrix". Note that a resin matrix references an adhesive or glue type matrix. This type of matrix usually contains the network of fibers rather than being the network of fibers as currently claimed. Consequently, claim 29 is indefinite as currently claimed.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3, 12, 15, and 22-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Auyer et al. (593).

Auyer et al. (593) disclose a metallic armor assembly comprising:

- |  |                         |
|--|-------------------------|
| a) a metallic facing element with perforations to reduce | 14 or 18                |
| the density by at least 20%; and                         | cols. 6, 7              |
| b) a fiber composite substrate backing.                  | 38; col. 2, lines 47-51 |

5. Applicant's arguments are addressed as follows. It is argued that the integument 38 of Auyer et al. encloses the metallic facing element 14, 18. In response, note that only the backing portion of integument 38 (the portion between layers 24 and 28) is being relied upon to meet the claim limitation directed to "a backing". Clearly this portion of integument 38 does not enclose either of the metallic facing elements 14 or 18.

6. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Auyer et al. (593) in view of Tarsi et al..

Auyer et al. (593) apply previously recited. However, undisclosed are circular apertures of a particular size and spacing to correspond to the diameter or caliber of the projectile encountered. Tarsi et al. teach circular apertures of a particular size and spacing to correspond to the diameter or caliber of the projectile encountered (see page 2, lines 10-26). Applicant is substituting one particular aperture shape and arrangement as explicitly encouraged by the secondary reference (see Tarsi et al. page 5, lines 2-6; page 4, lines 19-21; page 2, lines 18-26). It would have been obvious to a person of ordinary skill in this art at the time of the invention to

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apply the teachings of Tarsi et al. to the Auyer et al. (593) metallic armor and have a metallic armor with a different type of aperture with associated aperture size and spacing.

7. Applicant's arguments are addressed as follows. It is argued that (1) the prior art does not teach or suggest all of the claimed limitations. In response, see paragraph 6 above where each element claimed is specifically identified. It is argued that (2) there must be a reasonable expectation of success. In response, it is hard to image how altering the size of the holes to accommodate particular calibers would result in non-functional device. It is argued that (3) there must be some suggestion or motivation to combine the references. In response, note that Tarsi et al. specifically suggests altering the size of the holes or apertures to accommodate different caliber projectiles (see page 2, lines 10-26). With regard to the argued deficiencies in Auyer et al., these arguments have already been addressed in paragraph 5 above.

8. Claims 1-3, 6-7, 13, 15, 22-23, 25, and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Cawlfeld (216).

Cawlfeld (216) discloses a metallic armor assembly comprising:

- a) a metallic facing element with perforations to reduce the density by at least 20%; 41, 42; col. 9, lines 32-35  
col. 9, lines 35-37
- b) a fiber composite substrate backing; 44, 45, 48, 49; col. 9, lines  
37-52
- c) a ratio of the thickness of the fibers to the thickness of the backing layer is less than 20; and col. 9, lines 50-61
- d) the ratio of the thickness of the backing portion to the thickness of the metallic facing element is about 4. col. 9, lines 31-61

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9. Claims 1-8, 15, 20, 22-23, and 28-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Flocke et al. (912).

Flocke et al. (912) disclose a metallic armor assembly comprising:

- |  |                         |
|--|-------------------------|
| a) a metallic facing element with perforations to reduce | 6; col. 2, lines 26-28; |
|  | col. 5, lines 18-19     |
| the density by at least 20%;                             | col. 4, lines 4-5       |
| b) a fiber composite non-woven substrate backing;        | 4; col. 5, lines 1-15   |
| c) perforator diameters of 3 mm;                         | col. 5, lines 21-23     |
| d) an edge-to-edge spacing of about 4mm; and             | col. 5, lines 21-23     |
| e) an adhesive.  | 5                       |

10. Claims 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flocke et al. (912) in view of Dietz et al. or Cook.

Flocke et al. (912) apply as previously recited. However, undisclosed is a backing layer that is composed of fibers whose longitudinal axes are arranged in parallel. Dietz et al. and Cook each teach a backing layer composed of fibers whose longitudinal axes are arranged in parallel (fig. 4 of Dietz et al. and fig. of Cook). Applicant is substituting one type of backing layer for another as explicitly encouraged by the primary reference (see col. 3, lines 21-33 of Flocke et al.). It would have been obvious to a person of ordinary skill in this art at the time of the invention to apply the teachings of Dietz et al. or Cook to the Flocke et al. metallic armor and have a metallic armor with a different type of fiber composite for the backing layer.

11. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Flocke et al. (912) in view of Hartmann et al..

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Flocke et al. (912) apply as previously recited. However, undisclosed is a fiber composite substrate with an areal density of at least 2.5 pounds per square foot. Hartmann et al. teach a fiber composite substrate with an areal density of at least 2.5 pounds per square foot (col. 3, lines 34-44). Applicant is substituting one fiber composite substrate arrangement for another in an analogous art setting as explicitly encouraged by the primary reference (see col. 3, lines 21-33 of Flocke et al.). It would have been obvious to a person of ordinary skill in this art at the time of the invention to apply the teachings of Hartmann et al. to the Flocke et al. metallic armor and have a metallic armor with a different type of fiber composite substrate backing.

12. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Flocke et al. (912) in view of Li et al..

Flocke et al. (912) apply as previously recited. However, undisclosed is a fiber composite substrate with a fiber content of 75% or more. Li et al. teach a fiber composite substrate with a fiber content of 75% or more (col. 5, lines 10-12). Applicant is substituting one fiber composite substrate arrangement for another in an analogous art setting as explicitly encouraged by the primary reference (see col. 3, lines 21-33 of Flocke et al.). It would have been obvious to a person of ordinary skill in this art at the time of the invention to apply the teachings of Li et al. to the Flocke et al. metallic armor and have a metallic armor with a different type of fiber composite substrate for the backing layer.

13. Claim 26 is too indefinite in its current form to make a determination regarding patentable subject matter.

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14. Claim 14 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

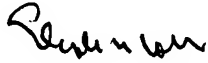
16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. Johnson whose telephone number is 571-272-6877 and whose e-mail address is ([Stephen.Johnson@uspto.gov](mailto:Stephen.Johnson@uspto.gov)). The examiner can normally be reached on Tuesday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on 571-272-6873. The Central FAX phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 800-786-9199.



**STEPHEN M. JOHNSON**  
**PRIMARY EXAMINER**

Stephen M. Johnson  
Primary Examiner  
Art Unit 3641

SMJ  
November 22, 2006